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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/715,629	11/18/2000	Kunihiro Watanabe	3120/FLK	7785

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EXAMINER	
MOE, AUNG SOE	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/715,629	WATANABE ET AL.	
	Examiner	Art Unit	
	Aung S. Moe	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *26 July 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-5 and 11* is/are allowed.

6)☒ Claim(s) *6-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see the Applicant's remarks filed 7/26/2004, with respect to 35 U.S.C. 112 rejections have been fully considered and are persuasive. The rejection of claims 8 and 10 under 35 U.S.C. 112 has been withdrawn.

Furthermore, the Applicant statement of "claim 10 has been rewritten including all of the limitations of the base claim and intervening claims" has been found to be incorrect because newly presented claim 10 does not include all the limitations of the base/intervening claims 6 and 8. In fact, newly presented independent claim 10 merely includes some of the limitations of claim 6, thus, claim 10 is considered as a new independent claim and it is not allowable, as the Examiner had acknowledged in previous Office Action.

Applicant's arguments, see the Applicant's remarks, filed on 7/26/2004, with respect to the rejection(s)of claim(s) 6, 7, 8 and 9 under the respective rejections as set forth in the previous Office Action have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Anagnostopoulos (U.S. Pat. 4,490,036).

2. Applicant's arguments with respect to the newly present independent claim 10 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Anagnostopoulos (U.S. 4,490,036).

Regarding claim 6, Anagnostopoulos '036 discloses a solid-state imaging device for use in a solid state imaging apparatus (Fig. 2; col. 3, lines 40+, and col. 4, lines 25+), the device comprising:

means for receiving an incident light to thereby generate charges (i.e., noted the CCD sensor 18), the receiving means having one or more photoelectric conversion elements (i.e., noted the photodiodes 22);

first accumulation means(i.e., noted the first photo-charges generated during the first control signal "T1/Φ1-4" provided by the timing control unit 102), in response to a first control signal (i.e., the control time "T1/Φ1-4"), for accumulating the charges generated from each of the photoelectric conversion elements (22), the first accumulation means having one or more charge accumulation devices (i.e., noted that the charges accumulated in the CCD sensor as shown in Fig. 4 and 9 in response to the first control signals "T1/Φ1-4" respectively; see Figs. 4, 8 and 9; col. 4, lines 25+, col. 5, lines 45+ and col. 6, lines 16+);

second accumulation means (i.e., noted the second photo-charges generated during the second control signal "T2/Φ1-4" provided by the timing control unit 102), in response to a

second control signal (i.e., the control time "T2/Φ1-4"), for accumulating the received charges generated from each of the photoelectric conversion elements (22), the second accumulation means having one or more charge accumulation devices (i.e., noted that the charges accumulated in the CCD sensor as shown in Fig. 4 and 9 in response to the first control signals "T2/Φ1-4" respectively; see Figs. 4, 8 and 9; col. 4, lines 25+, col. 5, lines 45+ and col. 6, lines 1+), wherein the second accumulation means is physically distinct from the first accumulation means (*i.e., as clearly shown in Figs. 8 and 9 and further discussed in col. 4, lines 30-65 and col. 5, line 45 – col. 6, lines 10, while the light emitting means 10 is on/off, the first and second image signals collecting/reading is operated separately by using distinct first/second control signals T1/T2, thus, the second accumulation means operated during the light emitting means is turned "on" is physically distinct from the first accumulation means operated when the light emitting means is turned "off"*);

first transfer means (i.e., Fig. 2, the elements 26) for transferring the charges accumulated in the first charge accumulation means in a serial sequence as a first charge signal (i.e., noted that the charges accumulated during the fist transferred in a serial sequence during the time periods t0-t2 as first frame signal as shown in Figs. 8 and 9);

second transfer means (i.e., Fig. 2, the elements 26') for transferring charges accumulated in the second charge accumulation means in a serial sequence as a second charge signal (i.e., noted that the charges accumulated during the second charge accumulation period are transferred in a serial sequence during the time periods t3-t4 as shown in Figs. 8 and 9);

control means for outputting the first control signal **or** the second control signal to select the first **or** the second charge accumulation means (i.e., noted that the clock unit 102 is capable

of selecting the sensor 18 to output the accumulated first/second charges by providing the respective control signals T1/T2), thereby allowing the charges to be accumulated in the first **or** the second charge accumulation means, respectively (i.e., see Figs. 8 and 9; col. 5, line 45 – col. 6, lines 45); and

means for calculating a difference (i.e., noted the differential output amplifier 110 as shown in Figs. 5 and 6 at the output of the imaging device 18 for calculating a difference of the first charge signal and second charged signal; see col. 5, lines 25+, and col. 6, lines 68+) between the first charge signal and the second charge signal to thereby output a differential signal in sequence (col. 6, lines 10-68 and col. 7, line 1+).

Regarding claim 7, Anagnostopoulos '036 discloses wherein each charge accumulation device in the first accumulation means (i.e., the charges accumulated during the time periods of T0-T2 as shown in Fig. 8) and the second accumulation means (i.e., the charges accumulated during the time periods of T2-T4 as shown in Fig. 8) is prepared for each corresponding photoelectric conversion element (i.e., the CCD sensor 18 as shown in Figs. 3, 4, 8 and 9).

Regarding claim 8, Anagnostopoulos '036 discloses wherein said solid state imaging apparatus (Figs. 2 and 5) includes a light emitting means (10) which is operated wither in an on-state or in an off-state thereof (i.e., see Fig. 8; col. 5, lines 60+); and said control means (102) outputs the first control signals (T1) and the second control signals (T2) during the on-state and the off-state of the said light emitting means (i.e., see Fig. 8; and col. 5, lines 45- col. 6, lines 30).

Regarding claim 9, Anagnostopoulos '036 discloses wherein the charges accumulated in the first and second accumulation means (i.e., Figs. 8-9) are fed en bloc to the first and second transfer means (i.e., the shift register 24/24'; see col. 5, lines 45-col. 6, lines 68), respectively;

the first and the second transfer means (26/26') transfer the charges in series (i.e., see Figs 8 and 9; and col. 6, lines 1-68 and col. 7, lines 1+); and at the same time, the first and the second accumulation means accumulate the charges therein (i.e., see Figs. 8 and 9; col. 2, lines 45+ and col. 5, lines 45 – col. 6, lines 68).

5. Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Kamasz et al. (U.S. 5,585,652).

Regarding claim 10, Kamasz '652 discloses a solid-state imaging device for use in a solid state imaging apparatus (Figs. 2 and 7; col. 1, lines 10+, and col. 5, lines 25+) wherein said solid state imaging apparatus includes a light emitting means (204) which is operated wither in an on-state or in an off-state thereof (i.e., noted the On/Off of the light emitting means is shown in the charge signals accumulated in the solid state imaging device; see Fig. 3B and 7), the device comprising:

means for receiving an incident light to thereby generate charges (i.e., the sensor 212/701), the receiving means having one or more photoelectric conversion elements (214/700);

first accumulation means(i.e., noted the first frame of photo-charges generated during the first sample time provided by the timing control unit 226), in response to a first control signal (i.e., the control time "t1-t3", for accumulating the charges generated from each of the photoelectric conversion elements (214/312 & 700)), the first accumulation means having one or more charge accumulation devices (i.e., noted that the charges accumulated in the pixels 300-

306/700 and further stored in the respective storage device 316/702-704; see Figs. 3A-3C and 7), wherein the first accumulation means additionally accumulates charges obtained during a continued on-state of the light emitting means (i.e., noted the charges additionally accumulated during the On-state of the laser Pulse "L" as shown in Figs. 3A-4 and 7 respectively; see col. 2, lines 1-10, and col. 9, lines 10-15) and transfer the obtained charges (i.e., noted the charges transferring shown in Figs. 3A-4 and 7; col. 6, lines 35+ and col. 9, lines 2+).

Allowable Subject Matter

6. Claims 1-5 and 11 are allowed.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 703-306-3021. The examiner can normally be reached on Mon-Fri (9-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aung S. Moe
Primary Examiner
Art Unit 2612

A. Moe
January 4, 2005